

## **REMARKS**

Claims 4 and 12-19 are pending in the application. Claims 14-17 are withdrawn from further consideration by the Examiner.

Claims 4, 12, 13, 18, and 19 are rejected under 35 U.S.C. 103(a).

### **Claims Rejections 35 U.S.C. 103**

Claims 4, 12, 13, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morawsky et al. (US 5,518,717). The Examiner's rejection has been carefully considered.

The Examiner was not persuaded by the arguments presented by Applicant on 02 August 2007 because Applicant has not shown any functional difference between unhydrolyzed zein and hydrolyzed zein.

In response to the Examiner's comments, Applicant provides, herewith, experimental evidence showing a clear functional difference between hydrolyzed and unhydrolyzed zein. At 0.1% and 1% concentrations, human hair treated with natural, unhydrolyzed zein displays both significantly reduced average combing force and significantly increased tensile strength in comparison to human hair treated with equivalent concentrations of hydrolyzed zein.

### **Elections/Restrictions**

Applicant requests that claims 14-17 be rejoined with claims 4, 12, 13, 18, and 19 in view of the unexpected results provided in the Appendix, in which the functional properties of natural and hydrolyzed zein are compared.

### Conclusion

The application in its amended state is believed to be in condition for allowance. Action to this end is courteously solicited. Should the Examiner have any further comments or suggestions, the undersigned would very much welcome a telephone call in order to discuss appropriate claim language that will place the application into condition for allowance.

Respectfully submitted,



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**Appendix: Study on the influence of natural and hydrolyzed Zein (concentration: 0.1% and 1% in aerosol spray) on combing force and tensile strength measurement of human hair**

Research Development



Keratin Research Physical Methods



Wella Service GmbH

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Darmstadt, 05<sup>th</sup> June 2008  
RD-KRPM - EC - 3206

**Study on the influence of natural and hydrolyzed Zein (concentration: 0.1%, and 1% in aerosol spray) on combing force and tensile strength measurement of human hair.**

**Proof of Efficacy**

05<sup>th</sup> June 2008

**Objective:**

Study natural and hydrolyzed Zein, incorporated into an aerosol spray, on tensile strength and combing force properties.

**Hair material:**

Combing force swatches, Caucasian hair, delivered 03. Feb., 07, length 22 cm, weight 1 g.

Bundles of 100 European Hair, delivered Oktober 2006 (lot no.: 15/2003)

The procedures of hair pre treatment (bleaching) are stored in the SOP:

Instructions of treatment-combing force swatches  
SOP No: WE-020-0001-00

Instructions of treatment-single fibers  
SOP No: WE-02-0003-00

**Methods SOP**

Tensile strength  
SOP No: WE-02-0023-00

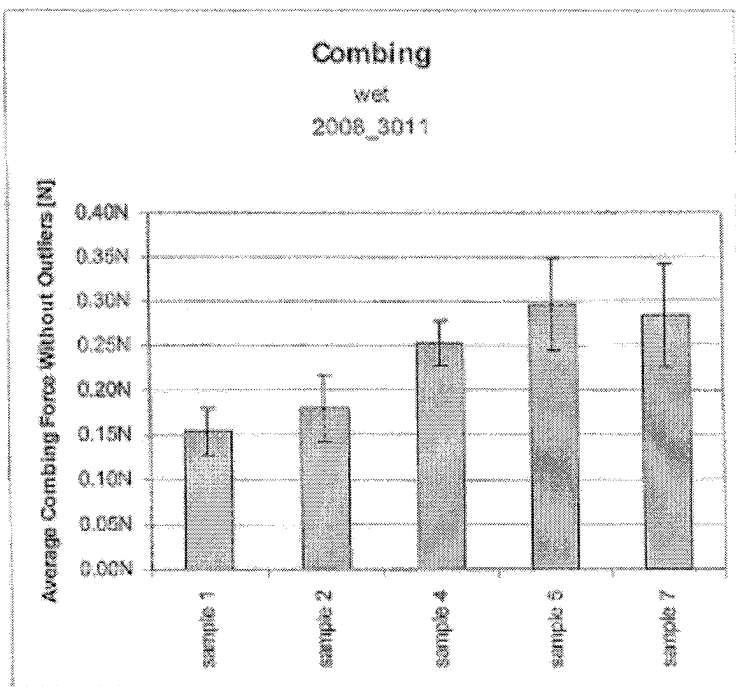
Combing Force  
SOP No: WE-02-0010-00

**Samples:**

sample	Sample ID	Formular Card
1 Natural Zein 0.1% in aerosolspray	DTT0037084AT01	80475006AF00
2 Natural Zein 1.0% in aerosol spray	DTT0037084ST01	80475006SF00
4 Hydrolyzed Zein 0.1% in aerosol spray	DTT0037084DT01	80475006DF00
5 Hydrolyzed Zein 1.0% in aerosol spray	DTT0037084ET01	80037084ET00
7 Bleached untreated hair		
8 virgin hair		

05<sup>th</sup> June 2008

**Results:**



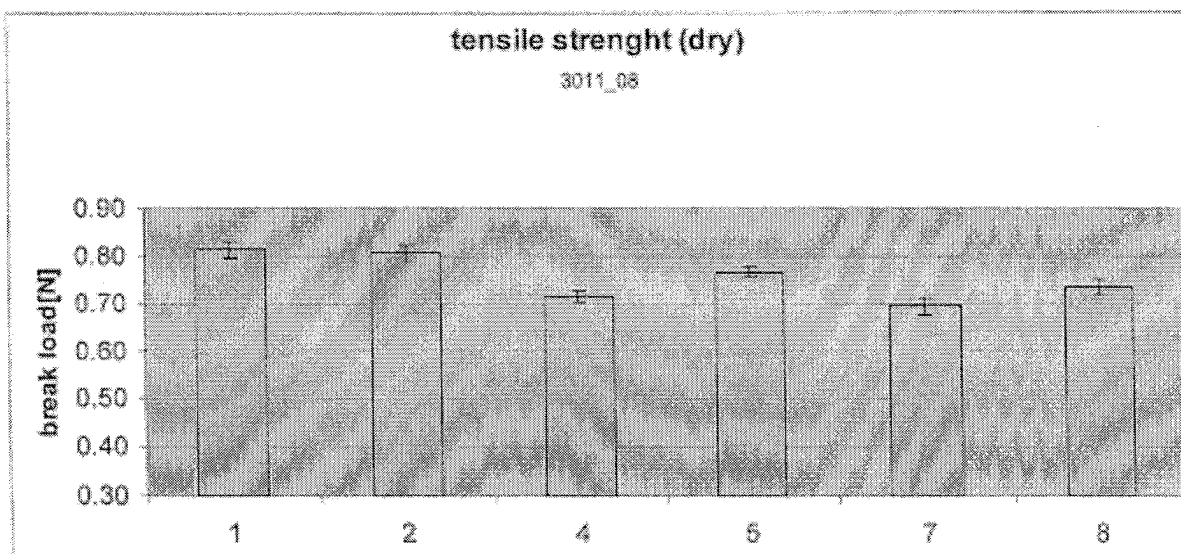
sample
1 Natural Zein 0.1% in aerosolspray
2 Natural Zein 1.0% in aerosol spray
4 Hydrolyzed Zein 0.1% in aerosol spray
5 Hydrolyzed Zein 1.0% in aerosol spray
7 bleached, untreated hair

Natural Zein vs. Hydrolyzed Zein

Natural Zein samples show, compared to the hydrolyzed Zein samples, lower average combing forces. The differences are statistically probable to significant. Thus the care effect of the natural zein is higher.

Average	Stdev	n	Sample Name	sample 1	sample 2	sample 4	sample 5
0.154N	0.026N	3	sample 1				
0.179N	0.038N	3	sample 2	70%			
0.252N	0.025N	3	sample 4	99%	95%		
0.295N	0.052N	3	sample 5	97.50%	95%	70%	
0.283N	0.059N	3	sample 7	95%	90%	60%	<55%

05<sup>th</sup> June 2008



sample

1	Natural Zein 0.1% in aerosolspray
2	Natural Zein 1.0% in aerosol spray
4	Hydrolyzed Zein 0.1% in aerosol spray
5	Hydrolyzed Zein 1.0% in aerosol spray
7	Bleached, untreated hair
8	virgin hair

#### Natural Zein vs. Hydrolyzed Zein

Natural Zein samples show, compared to the Hydrolyzed Zein samples, a statistically highly significant higher break load. This indicates a higher structural integrity of the samples treated with natural Zein.

AVG	STD	n	Samples	1	2	4	5	7
0.81415564	0.01746965	18	1					
0.80555192	0.01700482	20	2	80.00%				
0.71400989	0.01043677	19	4	99.90%	99.90%			
0.76827258	0.00873123	19	5	99.90%	99.90%	99.90%		
0.69306551	0.01829244	19	7	99.90%	99.90%	99.90%	99.90%	
0.73371085	0.01549063	17	8	99.90%	99.90%	99.90%	99.90%	99.90%